

T08D06 – (18.3) Salt Hydrolysis Notes

Name

1. 18.3.1 Deduce whether salts form acidic, alkaline or neutral aqueous solutions. (3)
- a. Provide the acid-base definition of a salt:

- b. Again, complete the following table for a group of normal and acid salts:

Acid	Salt	Example
HCl		
HNO ₃		
CH ₃ COOH		
H ₂ SO ₄		
H ₂ CO ₃		
HCN		

- c. How do acid salts behave in aqueous solutions?
- d. When normal salts dissolve in aqueous solution, the strength of their conjugate acids and bases determine the acidity of the resulting solution
- i. Provide the equation(s) for the salt NaCl in aqueous solution:

1. What is the conjugate base of Na⁺?
2. What is the conjugate acid of Cl⁻?
3. What is the resulting pH?

- ii. What is salt hydrolysis and how is it different than the above example?

- iii. Provide the equation(s) for the salt Na₂CO₃ in aqueous solution:

1. What is the conjugate base of Na⁺?
2. What is the conjugate acid of CO₃²⁻?
3. What is the resulting pH?

- iv. Provide the equation(s) for the salt of NH₄Cl in aqueous solution:

1. What is the conjugate base of NH₄⁺?
2. What is the conjugate acid of Cl⁻?
3. What is the resulting pH?

- v. Provide the equation(s) for the salt CH₃COONH₄ in aqueous solution:

1. What is the conjugate base of NH₄⁺?
2. What is the conjugate acid of CH₃COO⁻?
3. What is the resulting pH?

vi. Provide the equation(s) for the salt FeCl_3 in aqueous solution:

1. What is the conjugate base of Fe^{3+} ?
2. What is the conjugate acid of Cl^- ?
3. What is the resulting pH?
4. Now provide a structural formula reaction for the same reaction:

5. What type of coordinate covalent compounds work for such a reaction?

e. In summation, complete the following table for how salts change the pH of aqueous solutions

Type of salt:	Example:	Resultant pH
Acid Salts		
Normal Salt: Strong Base/Strong Acid		
Normal Salt: Weak Base/Strong Acid		
Normal Salt: Strong Base/Weak Acid		
Normal Salt: Weak Base/Weak Acid		
Coordinate Covalent Compounds		